Abstract ID : 862

Title : Probability of Disturbance: Right Whales and Ships off the Northeastern United States

Category : Conservation

Student : Not Applicable

Preferred Format : Either Oral or Poster Presentation

Abstract : Disturbance of North Atlantic right whales has been identified as one of the principal human-induced factors impeding the recovery of this highly endangered species. The National Marine Fisheries has restricted approaches within 500 yards (460m) of a right whale to reduce potential disturbance or injury. To evaluated the potential impact of shipping patterns on right whales off the Northeastern U.S., we used ship and whale sightings data from systematic aerial surveys to calculate the probability of large ships (>300 gross tons) passing within 500 yards of right whales. Trajectories of observed ships' headings were extended to the nearest potential turning points (e.g., shipping lanes) and 5 nmi (9.25 km) radius buffers were drawn around locations of right whale sightings of three or more individuals. We assumed whales were distributed uniformly within these buffers and that the number of individuals remained constant over 14 days. We added 500 yards on both sides of ships' tracks passing through buffers and calculated the percentage of the buffers' area affected. In the event a ship passed through two active buffers established on different days but within 10 nmi (18.5 km) of each other, only the buffer established closest in time to the ship's passage was used. The sightings data generated 11 buffers, three of which were penetrated by ships. Of the 98 ship transits generated, two penetrated one buffer and one penetrated two buffers. The mean probability of these ships passing within 500 yards of right whales within these buffers was 1.64% ±0.88%.